

Patent Claims

- 5 1. A method for reproducing direct currents, in particular for use in overcurrent releases in DC switchgear, with the aid of a primary winding (1) through which the direct current to be measured flows and which is magnetically coupled to a secondary winding (5) via an iron core (2),
characterized
10 in that the current signal supplied from the secondary winding (5) is integrated, and the integrated current value is supplied to a measurement device or to a tripping circuit of a switching device, with trimming of the integrated current value being carried out at
15 predetermined time intervals by the primary current to be measured being determined with the assistance of a magnetic field sensor (4) for measuring the magnetic field in the iron core (2), using the compensation method in which the magnetic field in the iron core (2)
20 is set to zero by means of a current, in the opposite direction to the primary current, in a compensation winding, and by the integrated current value being corrected to this value.
2. The method as claimed in claim 1,
25 characterized
in that the secondary winding (5) is used as the compensation winding in order to carry out the compensation method.
3. The method as claimed in claim 1 or 2,
30 characterized
in that a linear-rising direct current is fed into the secondary winding (5) or into a separate compensation winding in order to carry out the compensation method.
4. A DC/DC converter having a primary winding (1)

1 magnetically coupled to a secondary winding (5) via an iron core (2), for carrying out the method as claimed in one of the preceding claims, characterized by:

- 5 a magnetic field sensor (4) for measuring the magnetic field of the iron core (2), an integration circuit which is connected to the secondary winding (5) and whose output is connected to a measurement device or to a tripping circuit of a switching device, and a
10 compensation circuit which is connected to the secondary winding (5) via a changeover switch or is connected to a separate compensation winding wound on the iron core (2), comprising a controllable DC source (6) and an evaluation circuit (9, 10, 11) which
15 processes the current value of the DC source (6) when the magnetic field has been compensated, in order to trim the integration circuit.

5. The DC/DC converter as claimed in claim 4, characterized

- 20 in that the iron core (2) has an air gap (3) in which or in whose vicinity the magnetic field sensor (4) is arranged.

6. The DC/DC converter as claimed in claim 4 or 5, characterized

- 25 in that the magnetic field sensor (4) is a Hall probe.

7. The DC/DC converter as claimed in claim 4 or 5, characterized

in that the magnetic field sensor (4) is a magnetoresistive sensor.

- 30 8. The DC/DC converter as claimed in claim 4 or 5, characterized

in that the magnetic field sensor (4) is an indicator winding (7) to which a balanced alternating current can be evaluated